

Applicant: Mario Meggiolan
Application No.: 10/736,325

IN THE SPECIFICATION

Please amend the Specification as follows.

[0003] This application is a continuation of U.S. Patent 6,669,220, which issued on December 30, 2003, and is ~~Application Serial No. 09/951,549, filed September 14, 2001, which in turn claims priority from Italian Patent Applications T02000A00869 filed on September 15, 2000 and T02000A001028 filed on October 31, 2003, which are~~ incorporated by reference herein as if fully set forth.

[0013] According to an additional preferred characteristic, the ring forming each electrical contact on the battery holder container has an external surface defining a round recess for receiving and axially locking the ~~respect~~ respective contact pin in the seat receiving the battery holder container. In this way, the contact pins also perform a mechanical retaining function.

[0028] With reference to figures 1, 2, numeral 1 generally indicates an integrated control and power unit usable aboard a bicycle, comprising a housing 2 containing one or more electronic circuit boards forming the electronic control unit, i.e. the bicycle on-board computer, as well as a cylindrical container 3 holding one or more batteries for powering the various electrical devices aboard the bicycle. The battery holder container 3 comprises a lower end portion 10, which is received in an annular cylindrical seat 6, forming an integral part of the body of the housing 2. In the example shown, the annular seat 6 projects from a riser 7 extending vertically

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upwards from one end of the box 2, which is substantially flat and rectangular. Naturally, the specific conformation of the housing 2 and the container 3 illustrated in the drawings as non-limiting examples can be widely varied. The riser 7 of the housing 2 presents a hole 8 for engaging a screw for fastening the housing to the bicycle frame, ~~for example, according to the technique illustrated in the aforethe~~
~~aforementioned Italian Patent Applications T02000A00869 and T02000A001028~~
~~owned by Campagnolo S.r.l., i.e.~~ at the fastening holes formed in a tube of the bicycle frame, and used for mounting the bottle-cage.

[0029] With reference to figure 3, the battery holder container 3 presents an elongated tubular cylindrical conformation, which is closed on one end by a partition 3a and on the opposite end by a cap 3b, which is clipped on and welded to the body of the container 3, such elements being both made of plastic insulating material. The container 3 has two round grooves 3c on the upper end, which receives two circular cross-section rubber rings 9, suitable for grasping easily the upper end of the container 3. On the lower end, the container 3 presents a cylindrical portion 10, which is to be received inside the seat 6. A circular cross-section rubber ring 11, a metallic conductive material ring 12, a plastic material shim ring 13, an additional metallic conductive material ring 14, an additional rubber ring 15 and finally a cap 3b are arranged in sequence on the cylindrical portion 11. The two metallic rings 12, 14 are reciprocally isolated and form two

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electrical contacts which are respectively connected to the two terminals of the battery, or of the batteries, arranged inside the container 3. This connection is attained by means of the respective conductor wires, or metallic reeds, which are arranged inside the container 3, and which project from the container through a slot 26, arranged in the cylindrical portion 10 so as to be connected to the two rings 12, 14. As mentioned, however, any number of electrical contacts can be arranged. The two rubber rings 11, 15 ensure tightness, preventing infiltration of water in the area of the electrical contacts 3. As mentioned, the cap 3b is permanently welded to the container 3 after inserting the batteries. The latter can be made according to any known technique and are rechargeable.

[0031] When the battery holder container 3 is received in the seat 6, the two rings 12, 14 establish contact with the two contact pins 17, 18 (also see figure 2). Preferably, the external surface of the ring 12 and the ring 14 is formed to present a circumferential groove with a rounded cross-section, to provide an axial retention with respect to the contact pins 17 or 18. In this way, the two pins 17, 18 ensure both the mechanical connection and the electrical connection. The surface thus formed of each ring 12, 14 also produce a cam effect with that determines the retraction of the pins 17, 18 when the battery holder container 3 is extracted.

[0033] Figure 3 illustrates an additional supporting element of the container 3 on the bicycle frame, comprising a plate 23 with a hole 24 for

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engagement of a fastening screw to be screwed into a hole of a tube of the bicycle frame and a semicircular grip 25 for engaging the container 3 laterally. The screws engaging the holes 24 and 8 can engage, for example, the two holes usually provided in a tube of the bicycle frame for attaching the bottle-cage of the bicycle, ~~according to the concept disclosed in the aforethe Italian Patent Applications T02000A00869 and T02000A001028~~ (see Figure 4). Thus, the same screws are used to attach both the bottle-cage and the unit of the invention.